Application No. 10/614,324 Inventors: Norikazu Ueyama et al. Filed July 8, 2003 Docket No.: OKA-0209 Group Art Unit: 1657 Examiner: Kailash C. Srivastava

AMENDMENTS TO THE CLAIMS, COMPLETE LISTING OF CLAIMS IN ASCENDING ORDER WITH STATUS INDICATOR

Please amend the following claims as indicated.

Claims 1-13 (Canceled).

- 14. (Currently Amended) A reagent for determining amino acid sequence of protein or peptide, which comprises the metal complex according to claim <u>4 17</u>.
- 15. (Currently Amended) A method for determining amino acid sequence of protein or peptide, which comprises using the metal complex according to claim-17.
- 16. (Currently Amended) A method for determining amino acid sequence of protein or peptide, which comprises

reacting the metal complex according to claim—1_17 with a protein or peptide (A) of which the amino acid sequence is to be determined, to form a derivative (B) of said metal complex where the covalent bond of the functional group of the metal complex with the amino group of the N-terminal amino acid residue of the protein or peptide (A) or with the carboxyl group of the C-terminal amino acid residue of protein or peptide is formed, and

analyzing the derivative (B) through mass spectrometry,

wherein the derivative comprises said metal complex covalently bonded via a functional group on said metal complex to either the amino group of the N-terminal amino acid residue or the carboxyl group of the C-terminal amino acid residue of said protein or peptide.

17. (Currently Amended) A metal complex for determining amino acid sequence of protein or peptide, said metal complex comprising a functional group which has a property of forming a covalent bond with an amino group of an N-terminal amino acid residue of protein or peptide,

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wherein the covalent bond to be formed between the amino group of the N-terminal amino acid residue of protein or peptide and the functional group is not cleaved in a stage of ionization in mass spectrometry,

wherein the metal complex is represented by the following general formula (I):

$$(L_2)mM(L_1) (I)$$

wherein M represents a transition metal; L_1 represents a ligand having a substituent:— CO-OR₁ (where R₁ represents H or an active ester-forming group) or -R₂-CO-OR₁ (where R₂ represents an arylene a phenylene group, R₁ represents H or an active ester-forming group); L_2 represents a ligand; m is a number of L_2 , indicating 0, 1, 2, 3, 4 or 5.

18. (Previously Presented) The metal complex according to claim 17, which is represented by the following general formula (II):

wherein M represents a transition metal; and R₁ represents H or an active ester-forming group represented by any of the following formula:

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19. (Currently Amended) A metal complex for determining amino acid sequence of protein or peptide, said metal complex comprising a functional group which has a property of forming a covalent bond with a carboxyl group of a C-terminal amino acid residue of protein or peptide, wherein the functional group is NHNH₂

wherein the covalent bond to be formed between the carboxyl group of the Cterminal amino acid residue of protein or peptide and the functional group is not cleaved in a stage of ionization in mass spectrometry.

wherein the metal complex is represented by the following general formula (III): $(L_2)mM(L_3)$ (III)

wherein M represents a transition metal; L_3 represents a ligand having a substituent: - R_2 -NH₂ or - R_2 -NHNH₂ (where R_2 represents a phenylene group); L_2 represents a ligand; m is a number of L_2 , indicating 0, 1, 2, 3, 4 or 5.

- 20. (Canceled).
- 21. (Currently Amended) A method for determining amino acid sequence of protein or peptide, which comprises

reacting a metal complex which comprises a functional group which has a property of forming a covalent bond with an amino group of an N-terminal amino acid residue of protein or peptide or with a carboxyl group of a C-terminal amino acid residue of protein or peptide, with a protein or peptide (A) of which the amino acid sequence is to be determined, to form a derivative (B) of said metal complex where the covalent bond of the functional group of the metal complex with the amino group of the N-terminal amino acid residue of the protein or peptide (A) or with the carboxyl group of the C-terminal amino acid residue of protein or peptide is formed, and

wherein the derivative comprises said metal complex covalently bonded via a functional group on said metal complex to either the amino group of the N-terminal amino acid residue or the carboxyl group of the C-terminal amino acid residue of said protein or peptide.

analyzing the derivative (B) of said metal complex through mass spectrometry,

22. (New) A reagent for determining amino acid sequence of protein or peptide, which comprises the metal complex according to claim 19.

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23. (New) A method for determining amino acid sequence of protein or peptide, which comprises using the metal complex according to claim 19.

24. (New) A method for determining amino acid sequence of protein or peptide, which comprises

reacting the metal complex according to claim 19 with a protein or peptide (A) of which the amino acid sequence is to be determined, to form a derivative (B) of said metal complex where the covalent bond of the functional group of the metal complex with the amino group of the N-terminal amino acid residue of the protein or peptide (A) or with the carboxyl group of the C-terminal amino acid residue of protein or peptide is formed, and

analyzing the derivative (B) through mass spectrometry,

wherein the derivative comprises said metal complex covalently bonded via a functional group on said metal complex to either the amino group of the N-terminal amino acid residue or the carboxyl group of the C-terminal amino acid residue of said protein or peptide.